

### OUR VISION:

Turning Visions into Reality through:

- People
- Adding Value
- Alliances
- Performance

### OUR VALUES:

Building Relationships through:

- Dependability
- Integrity
- Trust
- Quality
- Family

### OUR MISSION:

Providers of Premier Services

## CAD + PREFAB: A WINNING FORMULA FOR NUCOR

### Design Skill, Prefab Expertise Saves Downtime and Manpower

A recent project for Nucor Corporation, the nation's largest steel producer, highlighted the advantages of Interstates' multi-discipline capabilities.

Originally, plans were made for a long single shutdown for the project, but circumstances forced a change to 2-phases. The first phase was for pre-work followed by a more aggressive shutdown strategy. The project involved the underground installation of 2000 feet of conduit in a concrete foundation...on a very tight schedule.

"Initially, we planned to have an engineer on-site and be involved throughout the planning stages," explains Tim Foreman, Project Manager. "Then the schedule changed and the customer needed to stay with the original design and engineering company. We decided the best approach would be to design and prefabricate the conduit rack, rather than building it on-site."

In addition to the scheduling challenge, there were other difficulties associated with the project. Concrete rebar had to be installed at the same time as the conduit, which meant that many people had to work in a confined area. And, the complex rack had to fit in place with only half-inch tolerances between the walls and piers.

According to Foreman, the parameters of the project made the use of precise 3D CAD design critical. "This involved planning with the customer throughout the

project, which showed many other problem areas for the customers. These conflicts were able to be resolved prior to shutdown." said Foreman.

Foreman credits Interstates CAD Operator Jeremy Oliver's early identification of potential problems during the design stages of the project for much of its ultimate success. The prefab shop took about three weeks to build the two main pieces of the rack, and it was installed in only a few hours.



*Prefab Conduit Rack*

"The use of 3D enabled our customer to review our conduit layout and make suggestions to enhance the design before conduit fabrication began," Oliver says. "This was a great example of how the

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# INTERSTATES RECEIVES AWARDS OF EXCELLENCE FROM ABC IOWA

Interstates was honored recently with two prestigious construction awards from Associated Builders and Contractors of Iowa. The awards were presented at the association's annual "Excellence in Construction" banquet in Des Moines.



From left to right: John Prohaska, MnSP; Roger Cannoy; Dave Crumrine; Larry Den Herder; Rodney Christianson, MnSP; Marty Vander Plaats; Tyler Freeman, MnSP

For the 14th time, Interstates received an Award of Excellence in the Electrical – Commercial & Industrial Over \$1 Million category. This year, the award was earned for Interstates' work on a soybean processing facility for MnSP in Brewster, Minnesota. The award is based on a range of stringent criteria, including complexity of the project, attractiveness, unusual challenges, innovation, safety and budget compliance.

The project was also recognized as the ABC "Project of the Year" for winning the most points in the evaluations for Excellence in Construction competition.

The Associated Builders and Contractors of Iowa is a non-profit construction trade association that represents general contractors,

subcontractors, education institutions, suppliers and associates. There are 400 member firms located throughout the state.

"The ABC of Iowa Excellence in Construction awards program is a salute to the best of the best of Iowa's construction industry," says ABC of Iowa President and CEO Greg Spenner. "This year's award winning projects represent what merit shop contractors have to offer – projects of the highest quality, built safely, on-time, and within budget."

According to Brandt Bensema, Director of Business Development, the award was especially meaningful since the project drew upon all of Interstates' capabilities.

"Design, construction, electrical engineering, automation, and instrumentation all went into this project," Bensema says. "As a specialty contractor, it's especially gratifying to be recognized in competition with so many fine general contractors for the overall project."

"It really was a total project execution," agrees Roger Cannoy, the on-site project manager. "It was a green-field project in which we were involved all the way from design to completion to startup." Cannoy notes that the project was similar to a plant constructed a few years ago for South Dakota Soybean Processors, which also earned Interstates an ABC of Iowa Award of Excellence.

"We were working with the same Construction Management team and the result was another award-winner," Bensema says. "But we knew we couldn't get complacent, so after this job, we went through an extensive Project Review to ensure that we continue to improve for the next plant we build."

## Krahling Named VP of Business Development

David Krahling has been promoted to the position of Vice President of Business Development, charged with the responsibility of exploring ways to deepen Interstates' relationships with its current customers and prospects.

"We offer a complex bundle of services," Krahling says. "We want to continue our focus to make sure our customers see us as more than a commodity. That means really getting to know them – how they work, what they need and what they value. We want to be able to show them how what we do can make them more successful at what they do."



David Krahling

Krahling began working with Interstates in 2001. He has an extensive background in agriculture, business and technology, with a B.S. and M.S. in Agriculture from Iowa State University in Ames, IA.

According to Larry Den Herder, Interstates Companies CEO, Krahling's communication skills, teaching ability, and systems thinking approach make him a natural choice to lead the business development team. "We recognize the importance of business development to the future success of the Interstates Companies," says Den Herder. "Building strong relationships with our customers has always been a fundamental part of what we do. David's approach to identifying and meeting customer needs is an important step in our continued efforts to develop relationships with people whose core values match ours."

# MAXIMIZE YOUR ELECTRICAL INVESTMENT

## How much does downtime really cost?

By Dave Crumrine, P.E. and Doug Post, P.E.

Downtime is a nasty term and subject of many staff meetings, reports, continuous improvement programs and company metrics. You would think that something so important to nearly every industrial sector would have a clear set of definitions and methods by which to calculate it.

Almost every factory loses at least 5% of its productive capacity from downtime and many lose up to 20%. In addition, downtime consultants estimate that 80% of industrial facilities are unable to estimate their downtime accurately and that many of these facilities are underestimating their Total Downtime Cost (TDC) by 200-300%!

Is this a cause for worry? Consider that not knowing TDC compounds itself when organizations seek to prioritize capital

cost. In a situation like this, the right project delivery method and the right project delivery team is critical when executing an aggressive plan to minimize downtime.

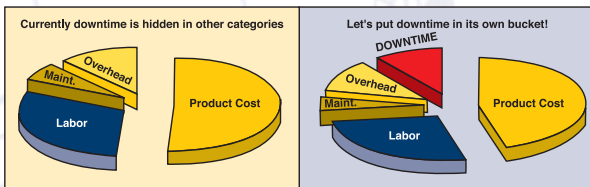
Selection decisions on your engineering, contracting, and other team support must be based on increasing your total project ROI (including reducing downtime and risk). This

may be contrary to your normal purchasing methods. Keep your eye on the project ROI "ball" to overcome these hurdles to building a great team.

A major challenge of calculating downtime costs is that many of the real costs are hidden in other cost areas and don't "show up" unless you account for them properly. To effectively calculate TDC, all these costs must be uncovered and listed in a separate "downtime" category.

Let's take a look at the important components of Total Downtime Costs (TDC). As you read the list, assess whether your downtime number fully includes these issues.

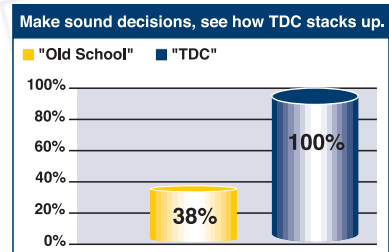
*Project financial decisions should be focused on raising ROI by reducing TDC.*



investments. As these organizations get more sophisticated at using financial tools like return on investment (ROI) and other leverage metrics, these tools become the key criteria in selecting and approving projects. When ROI is used, it's especially important to know the real cost of downtime in your plant. By underestimating it significantly, you could be missing out on valuable opportunities for your plant, making poor decisions, or neglecting what you intuitively know are the most important priorities.

Knowing your TDC can help you pick the best capital projects and then help you make better decisions within these projects. Sometimes the overall approach to a project can change based on this important number. It is not uncommon for the TDC on a retrofit project to approach or exceed the project's capital

(include recycle costs and/or scrap value), quality (inspection and rework costs), as well as other startup costs.



- Bottleneck Cost – The impact on downstream equipment at each stage in process.
- Sales expectation – Include the excess capacity such as larger buildings, spare production equipment, etc.

### Downtime Costs (per occurrence)

- Time – Calculate/record the time from the first occurrence of equipment breakdown to the time when equipment was back into full production.
- Reduced Production
- Scrap
- Band-Aid Costs – The costs of temporary fixes until the permanent fix is in place.
- OEM, Consulting, and Contractor Costs – Include the annual fee or estimated cost per year for support during downtime.
- Tooling – Calculate the replacement or rework cost for tooling (per occurrence).
- Parts/Shipping Cost

Obviously there is a lot to think about when determining TDC. With so much at stake, the payback can be found in a number of ways.

### For more information...

visit our web site at: <http://www.interstates.com/maximize.asp> or on the Downtime Central web site ([www.downtimecentral.com](http://www.downtimecentral.com)).

# Employee Updates



Scott Koll

Scott Koll has been certified as a Project Management Professional (PMP). The PMP is the premier project management credential for numerous industries and companies throughout the world.

PMP certification candidates must meet specific education and experience requirements, agree to work within a code of professional conduct, and pass a comprehensive examination designed to assess and measure project management knowledge.

Scott first worked with Interstates from 1979 – 1986. He rejoined Interstates in 1993, and now makes his home in Rock Rapids, IA with his wife Linda and family.



Jamie Schmidt

Jamie Schmidt, an Electrical Engineer with Interstates Control Systems, has received her Professional Engineer Certification. She is now licensed as a Control Systems Engineer (CSE).

Control systems engineering requires an understanding of the science of instrumentation and the automatic control of dynamic processes.

Jamie began working with Interstates in 1997, and is responsible for various phases of control system projects.

Jamie received her B.S. Degree in Electrical Engineering from South Dakota State University. She and her husband, Rick, have two children: Anna, 6, and Johnny, 3.

## NUCOR *continued from page 1*

teamwork of construction, engineering and prefab can really impact the success of a project.”

Lowell Dykstra, Prefab Manager, agrees that it was teamwork that made the difference. “We cut three days out of the shutdown schedule, had zero accidents and reduced on-site manpower,” said Dykstra.

Potential installation problems for the project were identified early in the process. This enabled the complex installation to be completed on time despite the aggressive schedule and shortened shutdown period.

“Using 3D CAD to prefab the rack worked really well,” said Doug Yost, Project Superintendent. “We only had to do minor rework to the rack on-site and that was only because we didn’t have accurate documentation of exactly where the conduit would be tied into. I would have regretted not doing it this way and will definitely push to use 3D CAD and prefab on future projects.”

For Foreman, the success of the CAD/prefab combination offered a different kind of reward. “This was the first time I can remember that a superintendent and I weren’t stressed out going into a Contractor’s Meeting,” he says. “When someone asked, ‘What about the electrical?’, we were able to say, ‘We’re waiting for you.’ That alone is enough for me to want to do it this way every time!”



## For more information...

about the CAD/prefab combination, contact **Tim Foreman** at Interstates Companies, **712-722-1662 x194**; or send an e-mail to **tim.foreman@interstates.com**.

# Interstates Out & About

May 1-3

**International Association of Operative Millers Annual Technical Conference and Tradeshow**



Nashville Convention Center  
Nashville, TN  
Booth #311

June 26-28

**International Oil Mill Superintendents Association Annual Convention**



The Rushmore Plaza Holiday Inn  
Rapid City, SD

June 28 - July 1

**International Fuel Ethanol Workshop and Expo**



Kansas City  
Convention Center  
Kansas City, MO  
Booth #444

August 16-18

**American Coalition for Ethanol Meeting and Ethanol Conference**



Qwest Center  
Omaha, NE  
Booth #208

Proud to be members of



# SENSOR SENSIBILITY

## Continuous Moisture Measurement System Ensures Consistency – Automatically

Controlling moisture is critical in processing any bulk dry materials – from soybeans to foundry sand. Interstates has teamed with A2D2 Electronics to develop an integrated, on-line system that can make moisture measurement and control an automatic process.

Based on the proven A2D2 sensor, Interstates Control Systems engineers have developed a user



*“Having the sensor on-line and integrated into the control system gives you automatic response.”*

*– Vander Velde*

interface which allows for personalized calibration and automation in a turnkey installation package. It's available with electrical installation and wireless options. A unique capacitance circuit performs real-time, in-line sensing for most flowable materials. Data can either be displayed or integrated into a plant-wide control system for automatic adjustment. The system features a small sensor area (just 2.5 inches in diameter) and flush-mount interior surfaces that won't block material flow, and is easy to install and calibrate. It even allows for calibration by product type.

The system is versatile enough to use with a wide range of materials, including whole and meal soybean and corn

processing; dried distillers grain; corn gluten; dried vegetables or sand.

According to Monte Vander Velde, Interstates Instrumentation Engineer, the ability to measure integrated moisture on-line offers a crucial advantage.

“With a bench-top moisture meter, you have to take a sample, take it to the lab, get the results, then make your decision. Having the sensor on-line and integrated into the control system gives you automatic response. You don't lose that time between detecting moisture and responding to it, and you can make sure your product meets all specs with no fluctuations.”

### For more information...

about the integrated moisture control system, contact **Paul Stokes** at Interstates Control Systems, **712-722-1663 x155**; or send an e-mail to **paul.stokes@interstates.com**.

## THE INTERSTATES COMPANIES

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## IN THIS ISSUE



**CAD + Prefab:  
A Winning Formula  
for Nucor**



**Interstates Receives  
Industry Award**



**New System Ensures  
Consistency**

FIRST-CLASS MAIL  
U.S. POSTAGE  
PAID  
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PERMIT NO. 412

RETURN SERVICE REQUESTED

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